GEOGRAPHIC SCHOOL BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated as a non-commercial institution for the increase of geographic knowledge and its popular diffusion. General Headquarters, Washington, D. C.)

Contents for Week of March 16, 1942. Vol. XXI. No. 4.

1. Australia: A Territorial Giant of Big Cities and Few People
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4. Fighting Igorots of the Philippines
5. War Homes Make Changes in Nation's Landscape

Roland W. Reed

INDIAN CHILDREN WERE TAUGHT POTTERY MAKING 1,000 YEARS AGO

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HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic School Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Entered as second-class matter, Jan. 27, 1922, Post Office, Washington, D. C., under act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of Oct. 3, 1917, authorized Feb. 9, 1922. Copyright, 1942, by National Geographic Society, Washington, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.

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Australia: A Territorial Giant of Big Cities and Few People

AS the Japanese move closer to Australia, certain outstanding features of the Southern Hemisphere's great island continent become increasingly significant. Australia is approximately the size of the continental United States. Yet within its nearly 3,000,000 square miles of land only about 7,000,000 people live, compared with more than 131,000,000 inhabitants for the United States.

Most of the people of Australia are found within a narrow coastal belt. Nearly half of the population is concentrated in the nation's half-dozen big cities. Sydney has a million and a quarter inhabitants, nearly a fifth of the country's total, and Melbourne also has more than a million people.

Population Spread Thin in North

Since Sydney and Melbourne are both on the southeast coast, thousands of miles still lie between them and the active theater of war in the southwest Pacific. The Bismarck Archipelago, outlying Australian islands where the Japanese gained a foothold, is some 2,300 air miles from Melbourne. Sydney, directly south of these islands, is about 2,000 miles away. Canberra, the country's 15-year-old, made-to-order capital, lies about 100 miles southwest of Sydney. The embattled Netherlands Indies reach a point within 250 miles of Darwin, the "out-back" base on the north-central coast of Australia.

Australia's population density is lightest in the Northern Territory, averaging about one person to each 100 square miles. Western Australia counts some 45 persons for each 100 square miles, while Queensland, in the northeast, has 141 people for a similar unit. In sharp contrast the southeastern State of Victoria contains more than 2,000 inhabitants for every 100 square miles. Australia's sparse population is due to its great distance from European sources of immigration, and to laws restricting immigration of non-white peoples. More than 99 per cent of the Australians are of European stock, largely British. The small group of aboriginal blacks, under 60,000, is declining in numbers.

The Continent That Gold Built Up

The Commonwealth of Australia is a self-governing nation giving allegiance to the British King. It comprises the six colonies, now called "Original States," of New South Wales, Victoria, Queensland, South Australia, Western Australia, and Tasmania, as well as the Northern Territory, and the Canberra Capital Territory (the latter corresponding to the District of Columbia in the U. S.).

Australia as a whole is rather flat, spreading out in vast plains and plateaus. Its important mountain ranges, found along the east coast, resemble the medium-high Appalachian Mountains of eastern U. S. Its rolling grasslands, low brush, and open spaces offer little natural obstruction to overland invasion.

Shortcomings of the transportation system may become serious handicaps in the war crisis. Air service links the ports coast to coast, but there are no railroad short cuts across the continent. Although the rail network is thick in the southeast where the large cities are situated, most lines end abruptly a short distance inland. Differences in railroad gauges hamper continuous service. The line inland from Port Darwin, begun in the 19th century to join the north coast with the south, extends southward for about 300 miles and breaks off in the desert

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D. Darian Smith

BEFORE THE WAR, SPREADING FACTORY BUILDINGS WERE SIGNS OF AUSTRALIA'S RAPIDLY GROWING INDUSTRIAL DEVELOPMENT

Australia has been mining abundant coal near the southeast coast, and iron ore chiefly in the south and west; these are used for a growing domestic steel industry. Petroleum there is a new development, especially valuable now that many of the Eastern oil sources have been destroyed. Oil production has been disappointing to date; only a few hundred barrels have been reported in the last year. The automobile industry was booming before the war, as evidenced by this 40-acre automobile body plant in the suburbs of Adelaide. For chassis shipped from the U. S. to this southern port, the plant manufactured bodies, and supplied completed autos throughout the continent as well as to neighboring countries in the Orient (Bulletin No. 1).

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The India Road to China, a Burma Road Substitute

BURMA'S loss of Rangoon to Japanese invaders emphasizes the need for a route other than the Burma Road by which China can receive supplies to keep fighting Japan on two fronts. Without Rangoon as a port of entry, traffic is brought to a standstill on the Burma Road, the 2,100-mile rail and highway route to Chungking through Burma and China's southwesternmost province, Yunnan.

The Chinese have long anticipated this danger to their life line from the Indian Ocean. For two years or more they have studied possible routes through the mountainous land to the north, where the Himalayas present stupendous obstacles in the shape of some of the world's loftiest mountain ranges and deepest river gorges. Now they have started work on a road 400 miles north of the Burma Road, through China's Sikang Province into India's Assam, crossing mountain passes 11,000 feet high in the shadow of 20,000-foot peaks—an engineering project that almost dwarfs the Burma Road achievement in comparison. By late 1942, the road is scheduled to open for traffic.

Through India's Tea Country in Assam

The new route, about 2,300 miles long between the Indian Ocean and Chungking, compares favorably with the 2,100 miles of the Burma Road. It divides naturally into three sections. The western link is a railroad in India, extending 700 miles from the port of Chittagong northeastward through the great Brahmaputra River valley to Sadiya, in northeastern Assam Province. The middle link is the Himalayan highway under construction, from Sadiya eastward to Sichang in Sikang Province, China. The eastern link, Sichang to Chungking, the Chinese capital, is a highway recently reported to be ready for use.

Chittagong, 100 miles east of Calcutta, across the Ganges River delta, is well suited to serve as a port of entry. Twelve miles up the Karnaphuli River from the Bay of Bengal, its harbor will accommodate vessels of any size.

The Assam-Bengal Railway, traveling north from Chittagong, is joined by a branch line from Calcutta south of the Brahmaputra River. There it turns northeast to Sadiya, on the south side of the river. The river meanders over a silt bed some six miles wide and in flood season is like an inland sea. The railroad was built to tap Assam's rich resources, of which tea is the outstanding source of wealth. More than 400,000 acres of tea land produce a quarter of a million pounds of tea annually, mostly for export to Europe.

River Mysteries Only Recently Explored

The Brahmaputra is a great and mysterious river, 1,800 miles long. In its reaches below Sadiya it carries silt that fertilizes its valley. From its source in southwest Tibet it flows eastward on the plateau for nearly a thousand miles at an elevation averaging 12,000 feet. This upper part is known as the Tsangpo. Not until 1924 was a solution found to the geographic mystery, whether the Tsangpo was the upper part of India's Brahmaputra or of Burma's Irrawaddy. In that year an expedition followed the Tsangpo through the wild country of its drop from the 12,000-foot level of the Tibetan plateau to a recognized part of the Brahmaputra at the 1,000-foot level near Sadiya.

From Sadiya old trade paths southeastward to Bhamo and to the Burma Road

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heart of the continent. The gap between this and the southern lines was filled by the Defense Highway, completed within the last two years.

The economic life of peacetime Australia demonstrates the influence of climate and terrain. With more rainfall, the continent could have been one of the world's richest farm areas. As it is, arid conditions limit agriculture generally to livestock raising and grain growing. More than 200,000,000 bushels of wheat were raised in 1939-40. There are about 16 sheep and two cattle for each inhabitant. Wool production in one recent prewar year exceeded a billion pounds. Meat exports were valued at 38 million dollars in 1938-39; butter exports totaled about 41 million dollars. Refrigeration made practical the export of dairy products, mutton, and beef to distant markets. In the tropical north, bananas and pineapples support a fruit-canning business.

The war has speeded up the nation's factories. Around the middle of 1939 there were nearly 27,000 of them, employing over half a million people (illustration, cover). Australia's iron and steel industry is also significant in the war effort.

Gold, which accounted for about half the value of all Australia's mineral production up to five years ago, made dramatic history in booms and "bubbles." In a continent which before the 1850's had less than half a million inhabitants, the discovery of gold was a vital factor in bringing people and development.

Note: For further information about Australia, see the following articles in the *National Geographic Magazine*: "Beyond Australia's Cities," December, 1936; "Capital Cities of Australia," December, 1935; and the following GEOGRAPHIC SCHOOL BULLETINS: "Darwin Leads Australia's Defense Parade," February 2, 1942; "Mines Added to Natural Dangers of Australia's Great Barrier Reef," November 10, 1941; "'Front Line' for Australia and New Zealand is Southeast Asia," February 6, 1941.

"The Making of an Anzac" will appear in the *Magazine* for April, 1942.

Australia may be located on the National Geographic Society's new Map of the Theater of War in the Pacific Ocean. A price list of maps may be obtained from the Society's headquarters in Washington, D. C.

Bulletin No. 1, March 16, 1942.

Victorian Government Railways

AUSTRALIA, HALF IN THE TROPICS, HAS "NORTHERN COLD" IN THE SOUTH

Lying in the same latitudes as Brazil and Argentina, Australia "cools off" southward, as the altitude increases as well as the distance from the tropics. Mountains rimming the eastern coast, the island continent's highest part, rise their highest at Mt. Kosciusko (7,330 feet), in the southeasternmost section. Near-by Mt. Buffalo, to the southwest, is the center of a National Park, where enthusiastic sportsmen enjoy their skis and toboggans during July and August, the Southern Hemisphere's mid-winter months.

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Mysteries of Ancient American History Solved

WHAT was life in the New World like before Columbus introduced European customs? How long are Indians known to have been living in the Americas? Where did they come from?

Answering these questions is one of the biggest jobs ever undertaken by scientists. Chief among the handicaps is the lack of a written language of the ancient Indians, except the picture-writing of the Mayas and certain other tribes of Mexico, notably the Aztecs. Gradually, however, the Sherlock Holmeses of archeology are piecing together the fascinating story of America's dim past. A pottery bowl, a grave containing bones and ornaments, even the charred wooden beams of old pueblos—all are valuable clues. From such simple articles scholars "read" about centuries-old people as intelligently as from a written history.

Scientists Wield Shovels and Literally Dig Up Facts

Pushing back these historical frontiers is not a laboratory job. The scientists don denim trousers, roll up their shirt sleeves, and go to work at the site of ancient ruins with picks and shovels, trowels, and brushes. Back-breaking labor in the dry heat of the desert, the tropical jungles and the almost inaccessible mountain peaks has resulted in important discoveries.

In the course of this research, expeditions sent out by the National Geographic Society have found out important facts. As part of its program of increasing geographic knowledge, the Society allots to geographic research a portion of the dues of its 1,165,000 members.

In 1912, for example, an expedition backed by the Society and Yale University excavated the lost Inca city of Machu Picchu, high in the Peruvian Andes. Another group of scientists, under the National Geographic banner, spent seven summers studying the ruins of Pueblo Bonito in northwestern New Mexico. Other scientists, following up that research, devised a "tree ring" calendar which showed the age of Pueblo Bonito and other Indian ruins.

The most recent expedition of this type was sponsored jointly by the National Geographic Society and the Smithsonian Institution, to throw light on the ancient Indian civilizations of southern Mexico. For the last three winters, Matthew W. Stirling, his wife, and assisting scientists camped in palm-thatched houses in the jungles of Veracruz State. They and their Mexican workmen uncovered many Maya ruins and relics (illustration, next page).

One of their most important discoveries was a Maya monument bearing a line of bars and dots. These symbols scientists deciphered as a date equivalent to either November 4, 291 B. C., or November 4, 31 B. C. The alternative dates must be considered because it is not yet clear where the Maya Calendar and our own calendar coincide—whether at the beginning or at the end of a Maya cycle of 260 years. In the case of either date, the carved stone is the oldest dated work of man found in the New World!

America's Apartment Dwellers 1,000 Years Ago

More than 15 years ago, a National Geographic expedition under Professor Byron Cummings of the University of Arizona studied an important Mexican ruin—the pyramid of Cuicuilco, 12 miles south of Mexico City. This stone-covered mound, about 52 feet high, had been partially buried by lava, perhaps three or four thousand years ago. It may have been a temple, possibly one of the earliest known examples of formal architecture in the Americas.

Of a much later date were the ruins of Pueblo Bonito. Under the direction of Neil M. Judd of the National Museum in Washington, the National Geographic expedition spent the summers from 1920 to 1927 excavating that colossal communal Indian dwelling in New Mexico.

Pueblo Bonito actually was a semi-circular series of connected rooms and apartments, which once sheltered between 1,200 and 1,500 people. Its stone foundations were the size of those of the U. S. Capitol. From inner courts, the dwellings were terraced upward like an amphitheater, four or five stories. Clearing away 100,000 tons of stone and sand, the explorers were able to get a good idea of the everyday life of Pueblo Bonito's pre-Columbian residents. Their earthenware vessels surpassed in form and decoration any other Indian pottery found in this country (illustration, cover).

The uppermost question in the minds of the explorers was the age of Pueblo Bonito. The answer was found in the rings of trees. Every year a layer of new wood is added to a tree's entire living surface. These rings can be seen on a cross-section of the trunk; to find a tree's age, count the number of rings. The rings vary in width. In a year of drought, the new layer is very narrow. In a year of plentiful rain, it is wide. The same story of fat and lean years is told by all the trees of a region.

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at Tali have hitherto been the chief means of communication. These are narrow and roundabout at best, and their capacity is not great.

The replacement for the Burma Road calls for completion of a new 450-mile stretch eastward from Sadiya across the high Himalayas to Sichang. This Assam-Sikang link, named for the provinces it connects, must cross the valley gorges of the Mekong, Salween, Yangtze, and Kinshong, where towering canyon walls make giant trenches more than a mile deep.

The eastern link of the new road parallels the Yangtze River valley on the north as does the Burma Road on the south. From November to June will be the best period for the route, while extreme cold will be a winter hazard in high mountain passes. From July to October the monsoon rainy season is likely to limit the use of the route as it has hampered the use of the Burma Road.

Note: For further information on routes between India and China, see the following articles in the *National Geographic Magazine:* "Burma Road, Back Door to China," November, 1940; and "Through the Great River Trenches of Asia," August, 1926; and the following GEOGRAPHIC SCHOOL BULLETINS: "Rangoon, 'End of War' Seaport, Begins the Burma Road," December 8, 1941.

The Burma Road and the route of the new road through Sadiya to Chungking may be traced on the National Geographic Society's new Map of the Theater of War in the Pacific.

Bulletin No. 2, March 16, 1942.

Joseph F. Rock

BETWEEN VALLEY AND PEAK, CLIMATE CHANGES FROM TROPICAL TO FRIGID

The Assam-Sikang highway link in the India route to Chungking must hurdle some of the greatest geographic obstacles yet attacked by highway engineers. It crosses the mountainous wedge between India, China, and Tibet, where within 48 miles three of southern Asia's biggest rivers have plowed their gorges through the Himalayas—the Salween (above), the Mekong, and the Yangtze. The great height of the mountains, reaching 20,000 feet, causes a vertical change of climate—the tropical valley floor supports ferns, fields on the lower mountainsides grow buckwheat, and the upper reaches have their perpetual snow and glaciers. The existing trails in this region are in some places so narrow that men walk sideways. Since no bridge crosses the Salween's icy current there, natives ferry travelers across in dugout canoes, or pull them on pulley-rope bridges.

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Fighting Igorots of the Philippines

THE Philippine Igorots, who mounted and guided American tanks against the Japanese in an action reported to have annihilated an entire enemy regiment, normally are more familiar with jungle weapons of bolo, spear, and ax, than with modern war machines.

The sturdy Igorots (pronounced e'-go-rots, both o's as in go), who fought with what General MacArthur called "breath-taking, heart-stopping desperation," are natives of northern Luzon, the largest island of the Philippines. Their name —also spelled *Igorrote*—means highlander or mountaineer, and is derived from the rugged character of the region they inhabit. Originally a descriptive phrase in Tagalog, the native pre-Spanish speech of the highlanders, the word has been modified by centuries of use by Spanish residents. The term has been somewhat loosely used to include all the inhabitants of interior northern Luzon, but now refers to natives of the districts of Bontoc, Benguet, Lepanto, and Amburayan.

Tattooed Warriors with Long Hair

The Bontoc Igorots (especially mentioned in the War Department dispatch on the action of MacArthur's men) are the most numerous and warlike of the mountain people. Living in the heart of rugged and inaccessible northern Luzon, these one-time head-hunters have been least influenced by the white man.

Pagan Igorots of Luzon's four districts tattoo their bodies and wear their hair long, especially in remote parts of the island. Like the Japanese, they teach that warriors killed in battle earn a place in heaven. Spirits of Igorot mothers who die at the birth of a child also are held worthy of that honor, while persons dying of other natural causes are believed to find an after-life home underground. Before burial the Igorot dead are placed in a sitting position and their bodies preserved by a drying process.

Most of the Igorots make their living by farming. Rice is the leading product, and in its cultivation these natives show considerable talent. Though modern farm implements are new to them, the Igorots long have irrigated their terraced fields by effective methods using networks of flumes and ditches. Some of the tribes also have worked mines for hundreds of years. With the gold, copper, and iron which they have thus obtained, they have made metal objects which they have traded in lowland markets. They live in small villages, and, as a rule, in simple houses of wooden frames, thatched with overhanging grass roofs or coverings of leaves. The total Igorot population was estimated some years ago at well over 200,000 people.

Tried to Keep Their Gold Mines Hidden

The Igorot country, with its mixed-up mountain ranges and frequent storms bringing torrents of rain, long kept out the civilizing influence of the Spanish on the coast. The mountains also hindered local communications between tribes.

During Spanish occupation of the Philippines (up to 1898), northern Luzon was regarded as extremely hazardous country. Although Spanish missionaries, in the wake of adventurers lured by the gold, made their way into this country, they failed to make any permanent impression on the mountain people. The white outsider was unable to win their confidence and induce them to mine more gold because, as one Spanish historian put it, the Igorots felt they kept their

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In the rooms of Pueblo Bonito there were many beams whose rings still were visible. Under Prof. A. E. Douglass of the University of Arizona, the National Geographic Society supported an expedition to chart and compare these rings.

This is how their research developed. The rings of the oldest living pines in the area were counted, and their pattern of narrow and wide rings charted. The same was done for the wood in old pueblos. In many cases, the charts overlapped, and by comparing them carefully, a record of tree rings was built up from 700 A. D. to the present time.

After that, it was a simple matter to fix the age of Pueblo Bonito. The oldest beam found there had been a sapling in the year 700 A. D.; its 219 rings showed that it was felled in 919. The newest log in the pueblo had been cut in 1130. Thus, between 919 and 1130, Pueblo Bonito's people were building, making their pottery, and cultivating maize and beans.

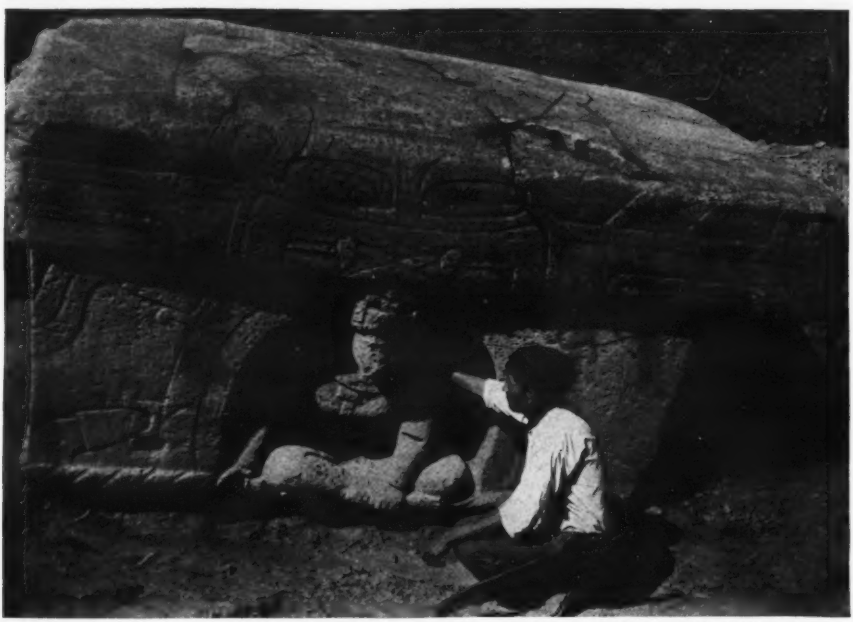
Like Pueblo Bonito, the old city of Machu Picchu in Peru had been abandoned before the arrival of the Spaniards. From the ruins it was evident that the Inca or pre-Inca residents had reached a high state of culture. The ruins were explored under the leadership of Hiram Bingham, then a Yale professor and later a U. S. Senator from Connecticut.

Machu Picchu, apparently once a place of refuge for thousands, was hidden in jungle growth atop a gigantic precipice. A retaining wall overhung a thousand-foot canyon. No part of the Andes offered better natural defenses, but the ancient Indians constructed two walls for additional protection. Using stone hammers, generation after generation must have shared in the work, laying stone walls without mortar, hewing stairways in the solid rock.

The National Geographic Society's archeological interests, however, have not been limited to Indian history. In 1938, the Society sent an expedition under Henry B. Collins, Jr., to study ancient Eskimo relics in western Alaska. Excavations in the Bering Strait region hinted that islands in the Strait had served as stepping-stones by which the earliest Eskimos, and possibly also their predecessors the Indians, had migrated from Asia into North America.

Note: For further information on archeological expeditions in the Western Hemisphere, see the following articles in the *National Geographic Magazine:* "Expedition Unearths Buried Masterpieces of Carved Jade," September, 1941; "Great Stone Faces of the Mexican Jungle," September, 1940; and "Everyday Life in Pueblo Bonito," September, 1925.

Bulletin No. 3, March 16, 1942.



Richard H. Stewart

STONE GUARDIANS STILL PULL A STONE ROPE AROUND THE JAGUAR ALTAR

Excavating the ruins of La Venta, in Veracruz State, Mexico, the expedition led by Matthew W. Stirling found a decorated altar carved from a single block of basalt weighing 30 tons. On the flat top was carved the outline of a jaguar skin, with the animal's oval eyes and fangs suggested on the side (above the stone figure's head). The figure of the seated altar guardian, wearing a wide bead collar and a breastplate, is carved lifesize, leaning forward in a lifelike position. Both hands clutch a stone rope (left) carved running around the base of the altar to the opposite side, where it is tied to the wrist of a companion guardian.

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War Homes Make Changes in Nation's Landscape

THE experimental "balloon house" has brought an architectural surprise to Virginia, where building tradition runs to stately white columns and ivied brick. Testing new ways to fill urgent housing needs, the balloon house was "inflated" at Falls Church, Va.—a structure of igloo-like hemispherical units, made quickly by spraying cement over an inflated half-balloon.

While not being reproduced in quantities, this strange built-while-you-wait house symbolizes an effort to supply speedily the homes in demand for booming populations in cities and rural areas busy with defense jobs. The neat Cape Cod cottage snugly adapted to resist northern cold, the rambling southern bungalow with wide verandah to invite a welcome breeze, the tile-roofed stucco house with shady central court for Florida and California—these traditional forms are joined by "defense homes," built in batches, of whatever materials can be spared.

Housing projects for America's war workers are now under way in 42 States. At the beginning of this year, in 255 localities distributed throughout the United States, homes were being built with public funds, either through governmental agencies or through contracts with private builders. The only States in which there was no war-housing were the sparsely settled regions of the West.

Virginia Foremost in Defense Building

The State building the largest number of these federal-financed homes is Virginia, with California second, Pennsylvania third, and the District of Columbia fourth. The nation's total of such home units exceeds (as of an official summary on January 15) 163,000.

Rows of homes, clusters of auto trailers, and dormitories are among the types of structures rising to shelter war-moved newcomers. An unusual feature of the construction program is the prefabricated house; its parts are manufactured in specified sizes, shipped to the crowded area, and put together in short order (in one case, at the rate of 60 a day). Such prefabricated buildings have been widely used in England for workmen's homes. The dormitory also is familiar on England's war scene, known there as the "hostel." British housing projects are frequently complete with their own restaurants, shops, and movie theaters.

Shipbuilding at the mouth of Chesapeake Bay, the enlargement of Army posts and Naval stations, and an overflow from the District of Columbia have brought to Virginia a greater number of newcomers than there were houses to receive them. Homes for more than 23,000 families are being provided. Alexandria is building for 2,500 families, Newport News for 3,500, Norfolk and Portsmouth together for more than 5,000. Radford and Pulaski, in the mountainous southwestern corner, are hammering together accommodations for several thousand. Other projects are a-building at Quantico and Dahlgren, and in Arlington County.

The 21 projects launched in the District of Columbia to put roofs over Gov-

This Bulletin supplies pertinent information for use in developing Unit I (Section III, C. Construction of Defense Housing) in the Office of Education handbook, "What the War Means to Us." A limited number of copies of this Bulletin can be supplied.

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treasure "better guarded under ground than in their houses." Even with the coming of United States rule, the land of the Igorots remained almost untraveled.

Gradually, however, the extension of American administration, with the building of roads and schools, was bringing about a change in once remote northern Luzon. By the time of the outbreak of the war, the influence of Western ideas was beginning to be felt in both dress and customs. Head-hunting was reported a vanished art, with the last organized hunt recorded in 1916.

Note: For further information about the Igorots and the Philippines, see the following articles in the *National Geographic Magazine:* "Facts About the Philippines," February, 1942; "Return to Manila," October, 1940; and "The Unexplored Philippines from the Air," September, 1930. See also the following GEOGRAPHIC SCHOOL BULLETINS: "Luzon, Largest of the Philippines," January 12, 1942.

The Philippine Islands are shown on the National Geographic Society's new Map of the Theater of War in the Pacific Ocean, which may be purchased from the Society's headquarters in Washington, D. C.

Bulletin No. 4, March 16, 1942.

George W. Goddard

IGOROT WEAPONS WERE DEADLY IN PRE-TANK DAYS

The Philippine mountaineers who were cited by General MacArthur for their heroism in a tank charge against the Japanese last month were known as dangerous opponents in the pre-tank days of hand-to-hand tribal warfare. Their old weapons, primitive but deadly, were designed for style as well as effect. The heavy spear, shown above, has ornamental flares where the head joins the shaft, and the head ax as well shows the Igorot fondness for fancy points. The ax, before American administration of the Philippines, was a ceremonial weapon used to decapitate enemies when the Igorots went on their periodic head-hunting expeditions.

ernment employees thronging to Washington's war duties lap over on the Virginia side of the Potomac, and leap the Maryland boundaries to Suitland and Greenbelt, Forest Glen, Cheltenham, and Cabin John.

In California, 56 different sites are echoing with defense building, while more than a thousand automobile trailers and dormitories for 5,000 people are being prepared, from San Francisco to San Diego. A roll call of the State's double-quick housing efforts would bring responses from Alameda, Benicia, Campo, Fort Ord and Fresno, Lerdo, Long Beach, and on down the alphabet to Vallejo.

Pennsylvania's defense houses are going up in Allentown, Erie, Ellwood City, Harrisburg, Coatesville, Philadelphia, Pittsburgh, Titusville, Williamsport, and Beaver County as steel mills and other industries boom.

Washington State repeats California's boom in the north on a smaller scale, especially around Bremerton, Seattle, and Tacoma.

Connecticut is busiest with defense housing in New England, while Ohio and Indiana are having the biggest Midwestern booms. Texas and Alabama are outstanding in the South for the extent of their federal-financed home building.

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Lee from F.S.A.

HOUSEWIFE MUST BECOME "TENTWIFE" WHEN HOUSES ARE TOO SCARCE

A large part of the federal-financed housing under way in California will rise in San Diego, where expanding airplane factories demand so many workers that there aren't enough houses to go around. Boom towns of tents have risen to give temporary shelter to families of workmen (such as this one in Mission Valley), repeating the housing congestion of pioneer days of California's gold rush. San Diego is scheduled for seven new communities of defense homes, one to be built by the U. S. Navy for families of enlisted men. Another is a cluster of 500 trailers, still another a group of houses built. of prefabricated parts, manufactured elsewhere and speedily put together. The largest project, bordering Linda Vista Road, supplies homes to 3,000 families.

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